



# Intro to the Clark County Amateur Radio Emergency Service for Prospective Members

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# Topics

- What is ARES®?
- What do Clark County ARES members do and what equipment do they use?
- What's the commitment?
- How do I get involved?



# What's ARES®?

- Amateur Radio Emergency Service
- Volunteer ham radio operators serving their communities (serving local government and non-government agencies) with voice and data communications
- ARES provides and tracks training specified by our served agencies and informs them who is qualified to support their requirements
- Served Agencies: Clark Co. Office of Emergency Management (OEM), State Office of Emergency Management (NVOEM), hospitals, National Weather Service





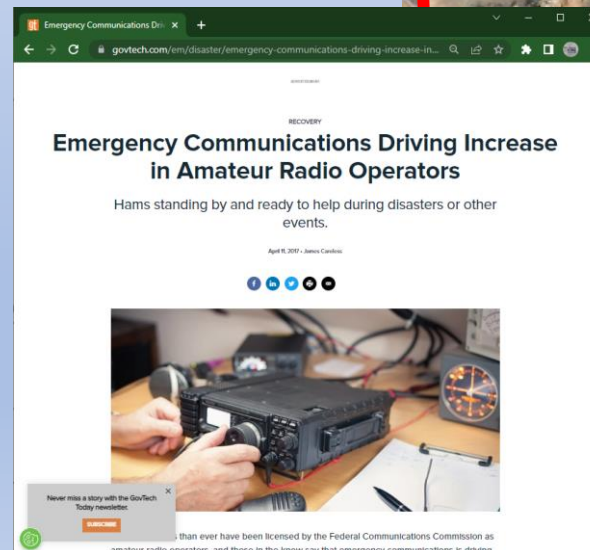
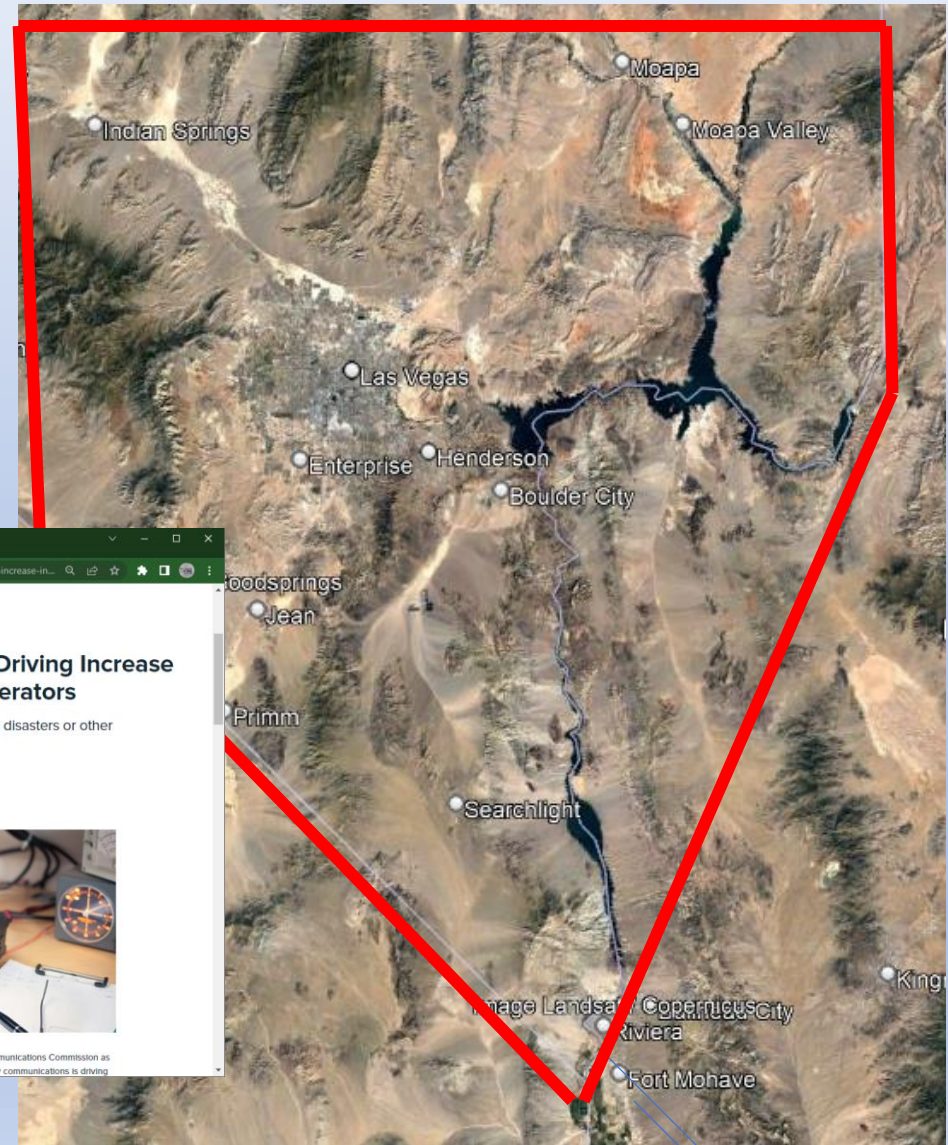
# What's ARES®?

- ARES is a program organized by the private national organization Amateur Radio Relay League (ARRL.org), ARRL membership is not required
  - Nevada is broken into 3 districts, we're in Southern District:  
Clark/Nye/Esmeralda/Lincoln counties
- ARES members can be enrolled with the OEM listing their skills and equipment to participate in operations on OEM's behalf under RACES (Radio Amateur Communications Emergency Service) federal rules.



# The Need

- Clark Co is somewhat triangular, 130 miles per side
  - Larger than the smallest 5 US states!
- 57 listed hospitals on OEM website
  - Ham radio backup at many
- 19 town boards + major cities
  - OEM direction to support them all
- → targeting 200+ *active* members (7000 hams in Clark Co.)
- Earthquake territory
- Monsoons
- Mountains make remote comms difficult → hams' specialty



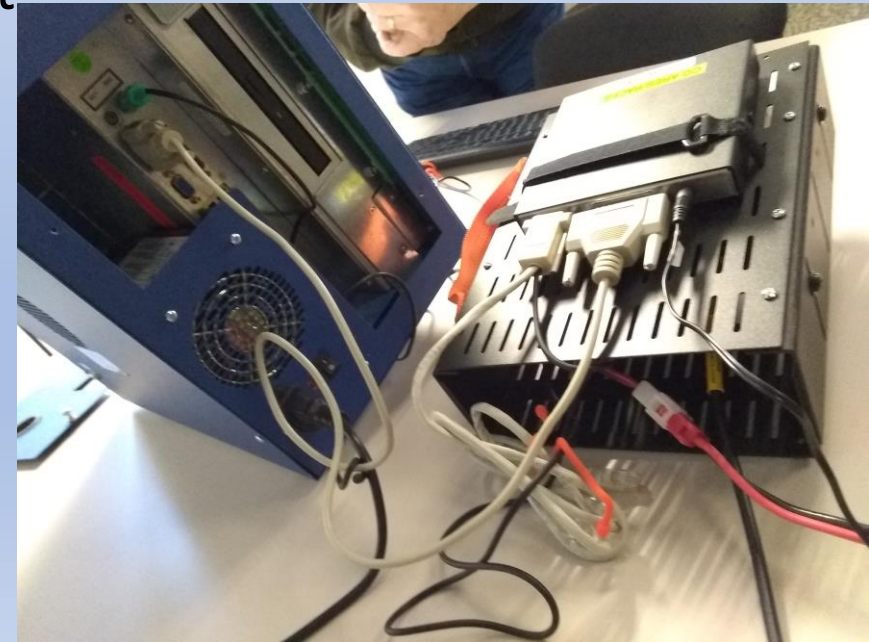


# What do Clark County ARES members do? What equipment is required?

- When “activated” by the OEM or a hospital, radio operators (RADOs) occupy government or hospital facilities staffing radios and computers providing links to other facilities in the county and to distant facilities (Carson City). Using amateur and government radios.
  - Could be in metro Vegas, could be in rural Clark County, your vehicle could be your operating location. Some opportunity to support from home.



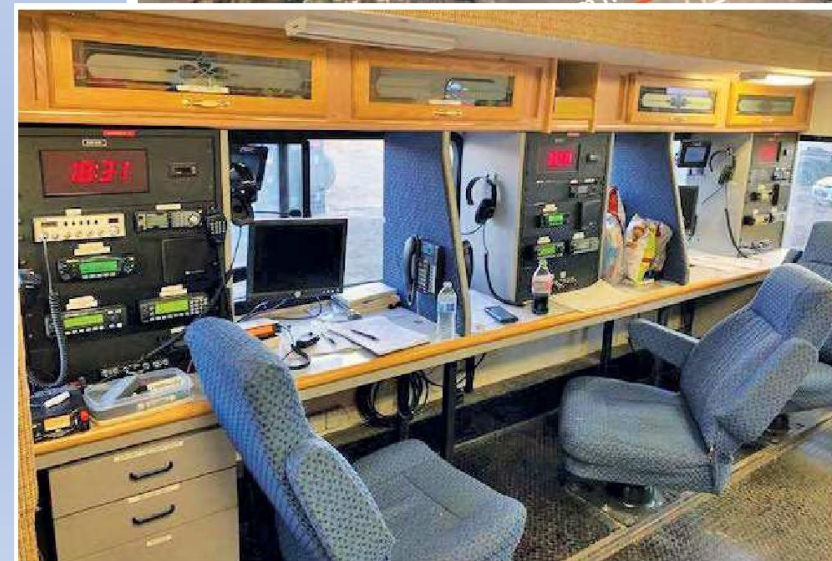
Legacy hospital “Blue Box”  
Hamlink voice/data system





# What do Clark County ARES members do? What equipment is required?

- Previous Activation: September 2019— Storm Area 51
- Clark and Nye Co ARES augmented Lincoln Co ARES to provide health and welfare support for the anticipated 30,000 attendees (3000 actual) in bare desert conditions.
- UHF/VHF voice and HF digital comms for Rachel, Hiko, Alamo NV; Clark County Emergency Comms Center, Regional Emergency Ops Center (Reno), NV DEM (Carson City)
- 400+ total hours volunteered



Photos  
© ARRL 2020  
Feb 2020 QST  
article



# What do Clark County ARES members do? What equipment is required?

- ARES members are trained in SKYWARN® procedures supporting the National Weather Service with timely and accurate reporting



**SKYWARN**  
WEATHER.GOV®



I15 near Moapa



Bunkerville 2010



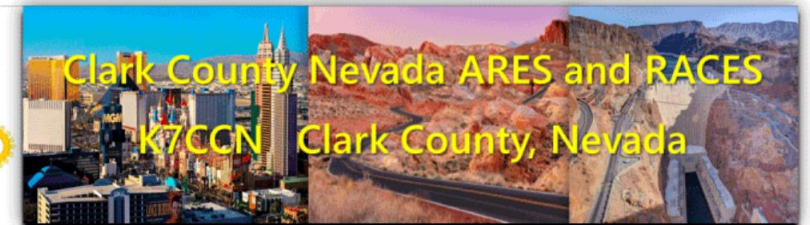


# What do Clark County ARES members do?

## What equipment is required?

- In preparation for activation, ARES members train on a regular basis in radio procedures, government incident command system (ICS) procedures, safety, etc.
  - The weekly Clark Co. ARES net (7:30 p.m. Mon) is essentially a small exercise, like a “resource net”
    - UHF/VHF voice: via repeaters and simplex
    - HF voice
    - UHF/VHF/HF digital: packet BBS, AX.25 packet and Vara Winlink
    - DMR, DSTAR digital voice
    - Echolink voice and text
    - Mesh (broadband TCP/IP over ham freqs)
    - “By any mode necessary”

ccnvares.org



**We Augment and Support Vital Communications During Emergencies and Disasters for our Served Agencies especially "When all else fails"**

Clark County ARES Net: Mondays 19:30L Pacific time: On 447.325 (-) 100.0, 147.18 (+) D244, and Echolink "CCNVARES" and "NV-GATE", IRLP Western Reflector Ch 3 (9253).  
Separate check-ins at 19:00L on DMR Nevada Talk Group 3132: CC 15 TS 2, DSTAR REF014B and N7ARR Port B, and HF 3.9650Mhz LSB

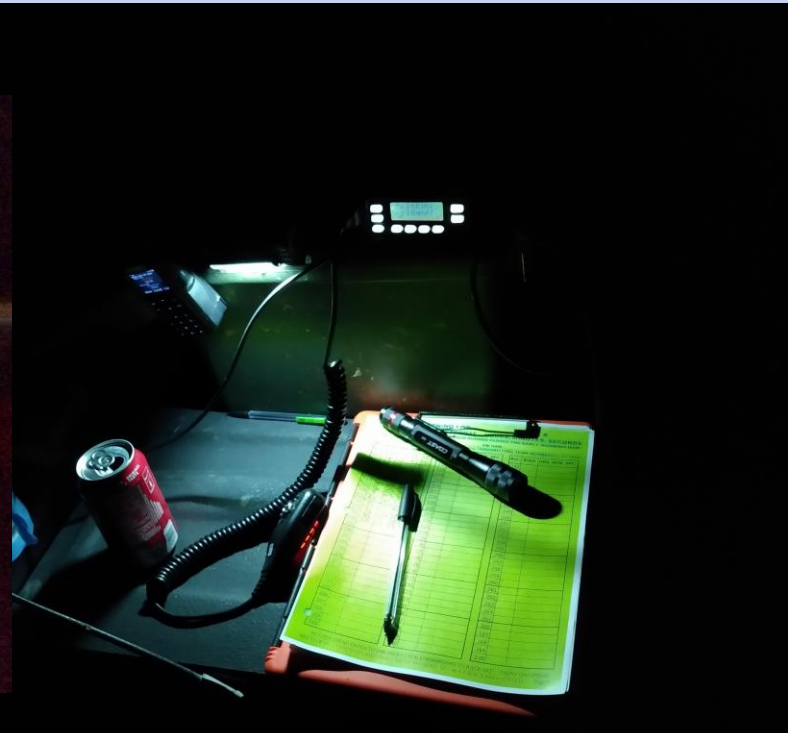
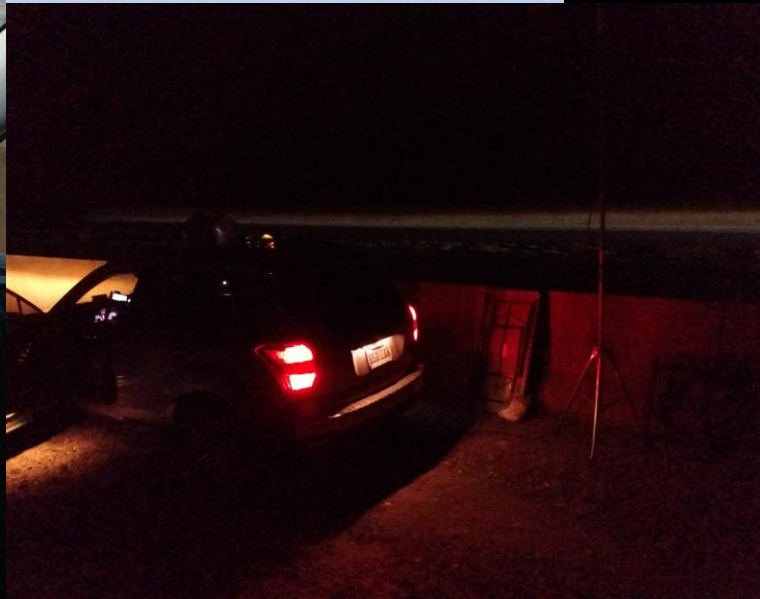


# What do Clark County ARES members do? What equipment is required?

- ARES members may individually support public service events with comms: Baker To Vegas, Silver State Classic Challenge, First Responder's Relay Race, Pony Express, Tonopah/Prescott Rally, ...
  - These possess many common elements to an activation and are good training



Baker 2 Vegas, night shift

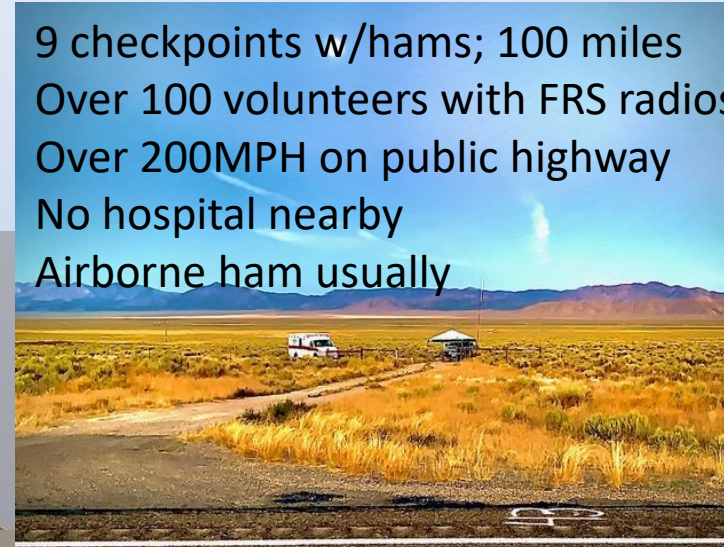




# What do Clark County ARES members do? What equipment is required?

- Public service event:  
Silver State Classic Challenge

9 checkpoints w/hams; 100 miles  
Over 100 volunteers with FRS radios,  
Over 200MPH on public highway  
No hospital nearby  
Airborne ham usually





# What do Clark County ARES members do? What equipment is required?

- Public service event  
Tonopah Rally



Go kit, "Objective Station":  
Mobile-class radio, good antenna, battery



# What do Clark County ARES members do? What equipment is required?

Participate in ham contesting like Field Day and Winter Field Day--keeps HF skills in austere conditions sharp

- Similar to keeping contact with Nevada OEM via HF  
→ Achieving a General license is a goal



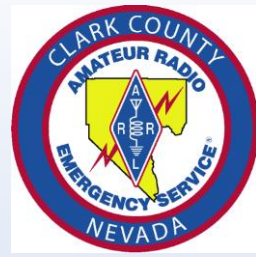
Technicians can learn HF procedures at ARES events

# What do Clark County ARES members do? What equipment is required?



- Field Day 2022
- HF ops at Mt Charleston
- International contest

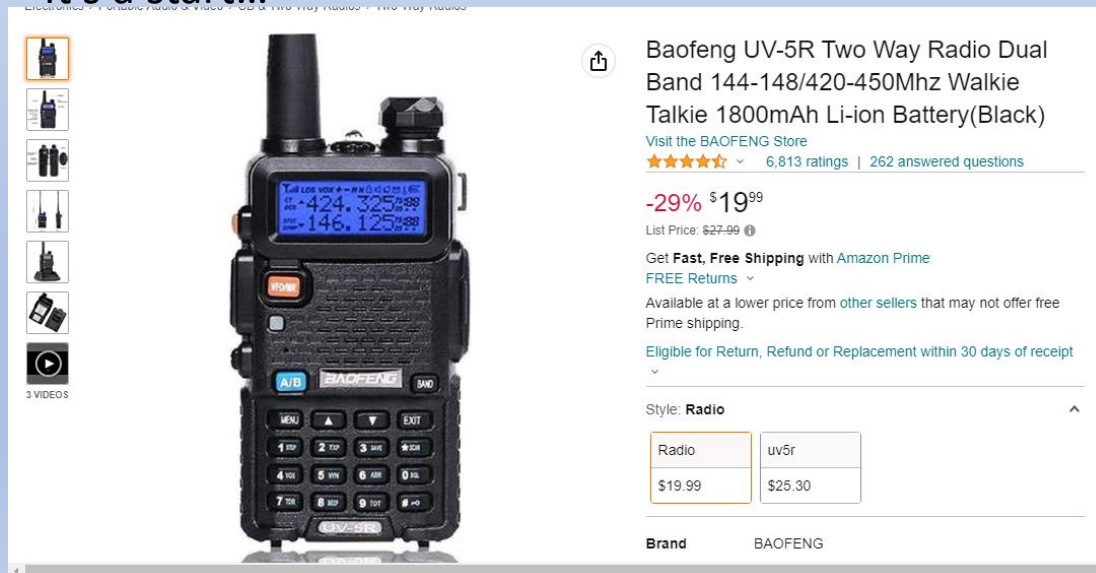




# What do Clark County ARES members do? What equipment is required?

- Almost all hams start with a handheld UHF/VHF radio (HT)
- You *might* get lucky and be able to reach a K7CCN repeater
  - 4 county-owned amateur radio repeaters covering the county, installed for ham emergency use

It's a start...





# What do Clark County ARES members do? What equipment is required?

- A better antenna (mag mount dual band on a cookie sheet) outdoors helps a great deal

HT alone definitely not enough out here



Objective Station: mobile,  
antenna, PC, interface, battery

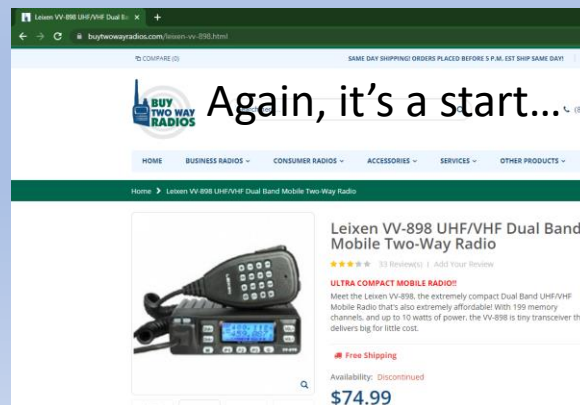


# What do Clark County ARES members do? What equipment is required?

- For simplex operations, most urban situations and rural ops at any appreciable distance, a mobile-class dual band is required: 25-50W UHF/VHF, with a “decent” antenna, perhaps on a 12-20’ pole; 20Ah+ battery
- A modest/old/used Windows (v11 now) laptop
- PC ↔ radio interface
- ARES members can provide extensive background on what works/doesn’t work. From “toss it in an ammo can” to pro-level builds



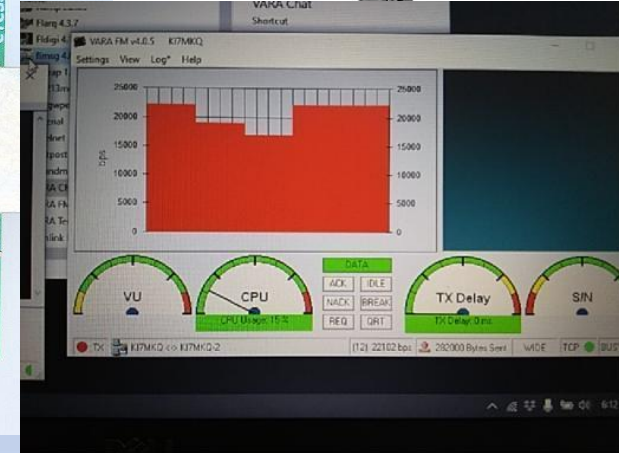
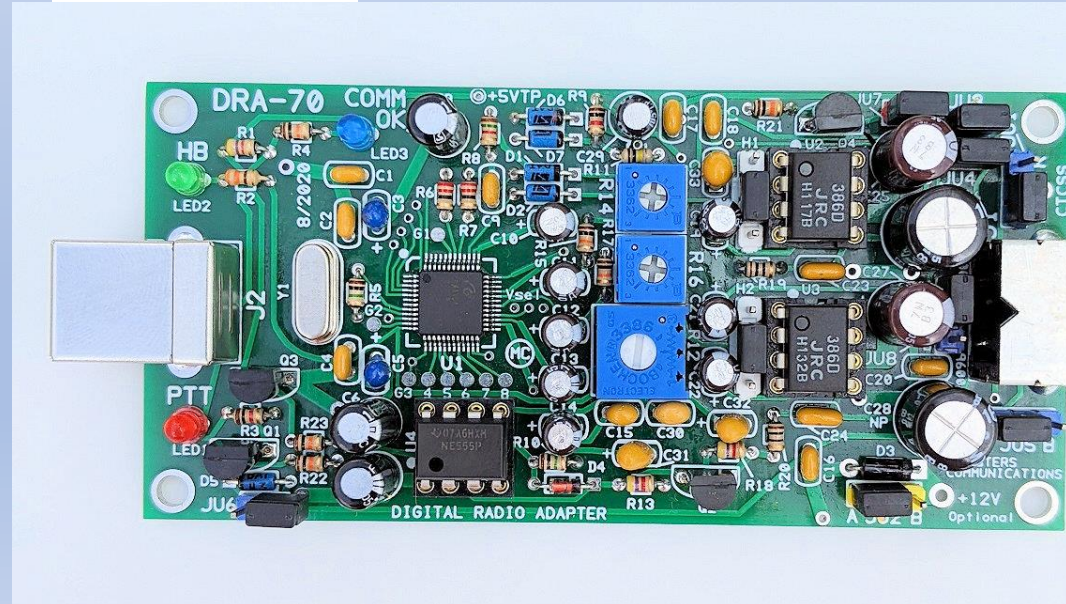
Go Kit:  
Mobile VHF/UHF,  
Antenna on pole, PC,  
interface, battery,  
admin items



ARES is working with served agencies to see what equipment *they* provide at *their* facilities

# What do Clark County ARES members do? What equipment is required?

- For digital operations a connection between the PC and radio





# What do Clark County ARES members do? What equipment is required?

- 20 AmpHour or more battery and means to charge it, preferably without grid power (solar).
- Paper, pens, flashlight, etc. to operate off grid power and at night

“Tape Measure Yagi”  
Yes, it works



Silver State Checkpoint





# What do Clark County ARES members do? What equipment is required?

- Some members, well it's what they do.

NORAD West at Frank's house

Annual Radio Rodeo





# What do Clark County ARES members do? What equipment is required?

- Do I have to build stuff? Do I have to solder?
- Well, a little. National ARES standards recognize the ability to provide basic configuration and repairs—installing 12V DC power fittings
- No soldering, no tools—other members will get you set up
- All software we use is free



# What's the commitment?


- Every ham determines how much to participate, subject to minimums needed to attain and maintain proficiencies
- Presently required
  - 4 FEMA-sponsored online courses, free (<https://training.fema.gov/emcourses/>)
  - Active Technician license with an eye to upgrading to General
    - Remember, Clark Co is huge, you may need to use an HF radio (no need to buy one)
  - Obtain and operate the Objective Station
    - Clark Co. ARES will negotiate in-place equipment with served agencies
    - Never know where you'll be needed, BYO equipment
    - Can substitute for a mobile (car) installation, strap to go kit down



# What's the commitment?

- Get a Winlink system account (email over radio), free at Winlink.org
- Complete Level 1 in the national ARES® Task Book with progress to complete Level 2; CCNVARES has adjusted some of the national req's

**ARES® STANDARDIZED TRAINING PLAN**



**ARES® EMERGENCY COMMUNICATOR INDIVIDUAL TASK BOOK**

**Task Book Assigned To:**

Name \_\_\_\_\_ Call: \_\_\_\_\_  
ARES Group: \_\_\_\_\_  
Phone Number: \_\_\_\_\_ Email: \_\_\_\_\_

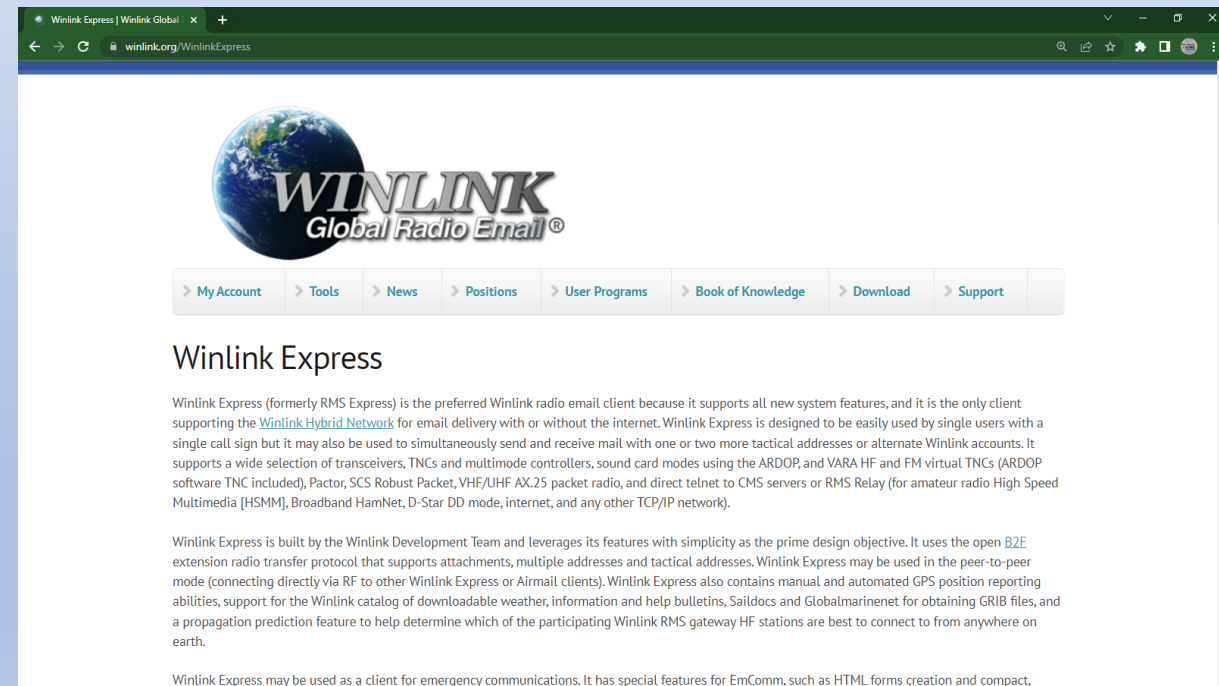
**Task Book Initiated By:**

ARES® Leader's Name: \_\_\_\_\_ Call: \_\_\_\_\_  
Title: \_\_\_\_\_ ARES Group: \_\_\_\_\_  
Phone Number: \_\_\_\_\_ Email: \_\_\_\_\_

**Initiated Location & Date:**

Location: \_\_\_\_\_ Date: \_\_\_\_\_

Version: 1.0.2 March 2019

A screenshot of the Winlink Express website. The browser address bar shows "winlink.org/WinlinkExpress". The page features a large globe logo with the text "WINLINK Global Radio Email®". Below the logo is a navigation menu with links: "My Account", "Tools", "News", "Positions", "User Programs", "Book of Knowledge", "Download", and "Support". The main content area has the heading "Winlink Express" followed by a paragraph of text describing the client's features and capabilities. At the bottom, there is a small note about its use for emergency communications.



# What's the commitment?

- Participation in weekly Nets, monthly meeting and training events/drills. Not every such event, but most. Check in periodically via a radio-enabled mode, not just Winlink or Echolink over the internet
  - EC: "The Internet is nice but we're charged to operate without it."
- Commitment to continuing education, on your own and as a group
- Commitment to handling traffic for the National Traffic System ([https://en.wikipedia.org/wiki/National\\_Traffic\\_System](https://en.wikipedia.org/wiki/National_Traffic_System))
  - Usually phoning a local ham with Radiogram traffic
- 1 hour/week usually, up to 10 if we participate in a national event (Field Day). Expected priorities: yourself, family, employer, Clark Co. ARES and other community orgs, in that order. We are not first responders on 24/7 recall.
- Operate from served agency facilities when needed; if not capable discuss with EC regarding your QTH being a capable relay station



# How do I get involved?

- Contact a Clark Co. ARES staff member with any questions, contact info on the *ccnvares.org* website
- Monitor the weekly Clark Co. ARES net, check in as a visitor
- Complete an application downloadable from [ccnvares.org](http://ccnvares.org)
  - County OEM likely will run a background check prior to badging or approving for RACES, ARES does not control that timeline
- Ask lots of questions, on the net, via email or at a meeting
- Unfortunately, in modern times a nonprofit corporation has to be formed to support this type activity. Government grants can't cover operating expenses, so yes there likely will be modest charge for dues.



Thanks for your interest!  
We look forward to your contact